13

AN EVALUATION OF LAND DEVELOPMENT, FLINDERS ISLAND

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Abstract

The characteristics of the land development project of the Agricultural Bank of Tasmania are compared with those of pre-existing private grazing properties. The evaluation is in terms of methods of land development, capital value of properties, stocking rate, total carrying capacity, and type of farming as related to acreage, ownership and success in land improvement. It is concluded that the War Service Land Settlement Scheme has successfully developed a considerable area through high capitalization, and that transport to markets, whether of live animals or carcases, is the urgent problem.

Introduction

Flinders Island, the largest member of the Furneaux Group, lies in Bass Strait off the NE. coast of Tasmania; the coordinates 148° E. and 40° S. intersect near the centre of the island. Flinders Island is approximately forty miles from N. to S., fifteen to twenty miles from E. to W., and has an area of 513 square miles; it is 110 miles from Launceston by air, and 238 miles from Melbourne.

In 1947 a Joint Committee of both Tasmanian Houses of Parliament was appointed to examine communication facilities and the island's potential for war service land settlement. Land development was initiated by the Agricultural Bank of Tasmania in 1952; private development also occurred but was mainly confined to a small area in the S. and SE. The dune-lagoon complex of the east coast, and the poorly-drained S. and central plains either precluded grazing, or necessitated major clearing and drainage. The major problems associated with this rural land development have been discussed elsewhere (Pryor 1967).

Status of Land Development

In general, the most highly developed properties (those fenced, cleared, and with improved pasture) are found on the W. coast between Emita and Loccota, in a belt between Whitemark and Lady Barron, and in the occupied portions of the Agricultural Bank's Furneaux Estate through the centre of the island (Fig. 1). Private properties with native pasture are confined mainly to the northern third of the island; Agricultural Bank land of similar status, but undergoing further development, is found in the N., S., and E. margins of the Furneaux Estate. Alienated but unimproved properties are situated in the SE. between Logan Lagoon and Lady Barron, around Lughrata, and scattered in smaller pockets across the island.

Since the Second World War, there has been a 51·85 per cent increase in the number of rural holdings in the Flinders Municipality, with only two or three outside Flinders Island. Over the last ten years the increase has been 21·48 per cent, with 62 properties being established by the Agricultural Bank; there are a further 52 private properties.

Since 1945 there has been a considerable increase in the acreage of exotic pasture, and a limited expansion of native pasture. The unoccupied-undeveloped areas in 1964 may be accounted for in three ways: (i) the Strzelecki Scenic Reserve (SW.) and Lenna Forest Reserve (W. central) and their associated high-

FIG. 1—Location map of Flinders Island. Key to Agricultural Bank Estates: K—Kentdale; FA—Fairhaven; FU—Furneaux; D.C.—Development continuing, no settlers; also estate in vicinity of Whitemark.

land masses; (ii) the Quoin soil association in the N., with highly leached soils over granite; and (iii) the dune-lagoon complex of the Nala-Lackrana-Memana soil associations on the E. coast. These three are at present legally inaccessible or cannot be developed economically, and apart from continued development immediately to the N. of the Furneaux Estate, little further expansion can be predicted.

Some indication of the sequence of land development adopted by the Agricultural Bank may be seen in the accompanying vertical aerial photograph (Pl. 36) and Fig. 2 located in the central N. of the Furneaux Estate, four miles from the E. coast. The area shown here is traversed by a 10 chain wide natural shelter belt, and by a major drain flowing E. to Patriarch Inlet. Two main roads run W.-E.: No. 2 road (to the N.), and No. 1 road (to the S., with access roads to four settlers' homes). Farm layout, some internal property divisions, siting of tanks and other features can be identified, and in summary, the history of land development is as follows:

1. **N. of "nature strip":** initial clearing 1958, ploughing 1959, seeding 1960, top dressing 1961 (when airphoto taken), liming and reseeding 1964; central portion is buffer block, remainder allocated as additional acreage to other properties; initial drainage channels unfilled and ungrassed at the time of airphoto; some natural shelter retained; area N. of No. 2 road as yet unallocated, and had not been sown in 1961.
2. **S. of "nature strip":** initial clearing 1952/3, ploughing 1954, seeding 1955, top dressing 1956, liming and reseeding 1957; redevelopment 1962/3 including CuCo superphosphate, with both potash and CuCo super S. of No. 1 road; minor drains now well grassed and some filled-in; some natural shelter retained; all properties now on permanent lease (1964).

An examination of official reports (Agricultural Bank of Tasmania, 1954-64) emphasizes both the high costs per ac. involved in land development, and the huge area actually 'reclaimed' (about 70,000 acres), and this confirms the conclusion that government finance—totalling some $12m. to date—was the only possible medium; private settlers could not have borne the costs of clearing, draining, and pasture development, and yet some 62 private individuals have been placed on highly capitalized properties at very reasonable repayment terms, with many properties already achieving optimum turn-offs.

Three further aspects of land development will be outlined:

(a) **The average capital value of grazing properties** provides a useful index of land development. There are three main areas of low capital value per acre (up to $16.00 per ac.) properties in the northern third of the island, the central W. coast, and the SE. In the N. and SE. many of the properties are unoccupied and have not been developed, and if fenced and cleared, do not have improved pasture; small properties and absenteeism are factors on the central W. coast.

The three areas of relatively high values ($32.20 to $92.00 per ac.) are the Kentdale-Fairhaven Estates, the Furneaux Estate, and private properties from the aerodrome S. and SE. to Loccota and the road N. from Lady Barron. On the one hand these include the larger Agricultural Bank and private grazing properties, and on the other hand small acreages with more intensive land use in the form of dairying. Within the Furneaux Estate there is a range from $22 to $74 per ac., reflecting the degree of development and sequence of occupation, the higher value properties in the N. having been developed first. These groups of high value properties are characterized by a relatively high degree of land development and

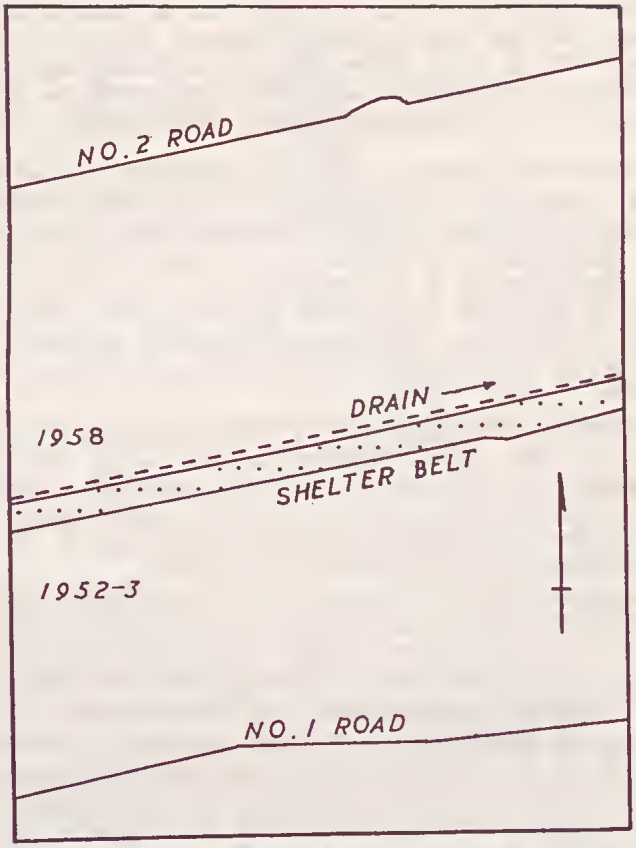

FIG. 2—Key diagram to airphoto, Plate 36; dates indicate commencement of clearing. For location, see Fig. 1.

pasture improvement. Two apparently nodal clusters (SE. of the aerodrome and Whitemark respectively) appear to be due to a combination of early development, favourable soils, and access to internal and external transport.

(b) **Stocking-rate** provides a second indirect index of land development. In terms of Fat Ewe Equivalents (Agricultural Bank of Tasmania, 1965) per ac. of total property acreage (as grazed acreage was not always known accurately on private properties), an outstanding feature is the low stocking rate on properties N. of Emita, and the comparatively higher rate S. of Whitemark, along the Lady Barron road, and E. from Emita through the Kentdale, Fairhaven and Furneaux Estates; there are, however, notable variations within and between properties. In general, the low score in the N. (average 0·49 FEE's/ac.) may be correlated with the absence of improved pasture, an earlier period of private settlement, and the highly calcareous soils of the Lughrata and Ranga soil associations. Agricultural Bank properties have a higher and more uniform rate (a majority have from 1·5 to 2·5 FEE's/ac.) because the total acreage of each block has been calculated to carry approximately 1200 FEE's, the estimated economic optimum; seven low scores here (0·5 to 1·49) indicate properties only recently occupied and in the

process of stocking-up, or recent sales of livestock with the farmers uncertain as to future purchases. The average for Flinders Island, based on the total acreage of all properties, is 1·55 FEE's/ac.; other averages are: all Bank properties 1·85; all private properties 1·36; and for all Bank properties, based on *acreage under pasture*, 2·29. Private holdings range from 0·23 to 3·56, and Bank blocks from 0·72 to 3·86 FEE's/ac. of total property acreage.

There is a complex cause-effect relationship between stocking-rate and capital value: a higher degree of land development as reflected in capital value makes possible a higher stocking-rate; and the higher the turn-off and subsequent income, the more finance available for redevelopment and continued pasture improvement.

(c) Fig. 3 below indicates the range of **current carrying capacity per property**, as distinct from stocking rate. Properties of private settlers exhibit the highest and lowest scores, from 20 to 8,450 FEE's per property (the 8,450 FEE's on a property of 3,283 acres could not be included in this figure). The clustering around 3-500 acres, and conversely the scattering above 1,000 acres, are important characteristics; dairy properties, or supplementary non-farm income, account in part for the former; a majority of all properties with less than 750 FEE's derive all, or some significant proportion of their income from dairying; this is consistent with the relatively high economic returns and grazing pressure per unit input in the dairy industry. The 'scatter' exhibited by private properties is primarily a reflection of land development, as already discussed. War Service Land Settlement Scheme (W.S.L.S.) properties range from 240 to 2,927 FEE's, with a concentration between 900 and 1,300. Inspection of Fig. 3 emphasizes (a) the essential differences, in acreage and carrying capacity, of the two types of properties; and (b) the fact that at the time of interview (January 1965) there was little direct conformity on W.S.L.S. properties to the recommended optimum carrying capacity.

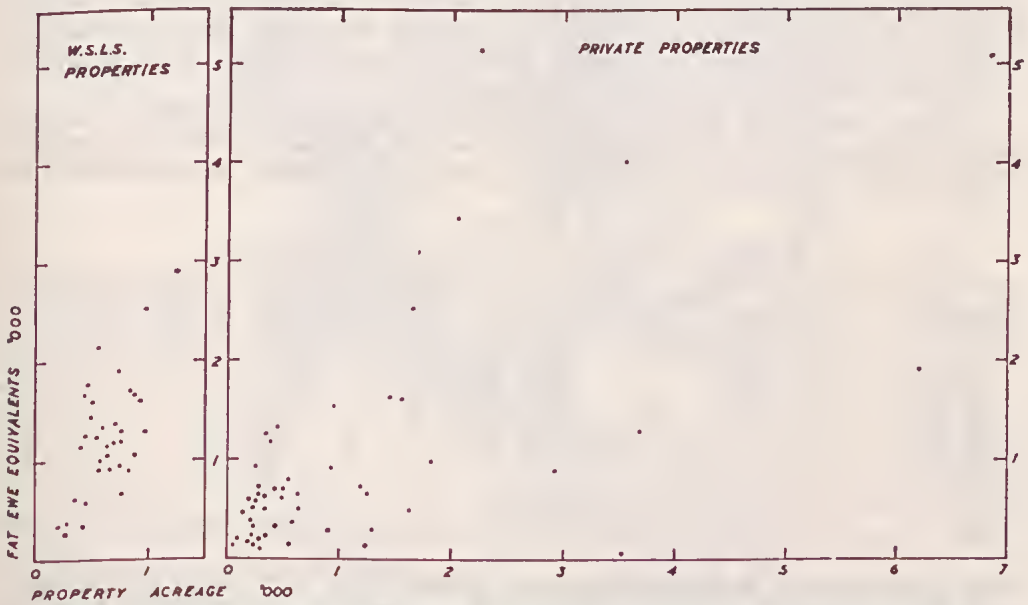

FIG. 3—Carrying capacity in fat ewe equivalents by property acreage, for private and War Service Land Settlement Scheme properties. (One head of beef or dairy cattle represents five FEE's.)

Current Types of Farming

The Furneaux Group has not featured in studies of the agricultural geography of Tasmania; Scott, for example, explicitly excludes all Bass Strait islands 'owing to the need for a compact laboratory', but in a 1961 paper extended his 'Minor Grazing Areas' category to include Flinders Island 'which was not included in the farm survey, (but) may be regarded both physically and agriculturally as a detached portion of the Far Northeast' (Scott 1961). This is an adequate generalization at this level but detailed studies reveal greater variety.

In 1946 there were 108 'rural holdings' in the municipality, and 164 in 1963-4, an increase of 51·9 per cent; during the same period the number of properties grazing cattle increased 43·2 per cent, and sheep 108·8 per cent (Commonwealth Bureau of Census and Statistics, 1945-64). The map (Fig. 4) indicates major areas of dairying, beef or sheep grazing, and combinations of these three; the type-of-farming category is dependent upon the source of ⅔ or more of total income for each property.

Sheep properties are outstanding on the Agricultural Bank's Furneaux Estate through the centre of the island, and others are scattered along the road between Whitemark and Lady Barron in the S. and SW. In general this coincides with improved pasture, higher carrying capacity, a rainfall of 30-31 inches per annum, and the Wingaroo, Whitemark, Metta, Lenna and some Quoin soil associations. Dairying is the dominant income source on ten properties scattered between the Agricultural Bank's Kentdale and Fairhaven Estates (central W.), Loccota (SW.), and Badger Corner (SE.); these are on improved pasture of moderate carrying capacity, with a wide variety of soil types, and rainfall from 28-31 inches. There are three beef properties in the NW., and three in the SW. on Lady Barron Road. The beef-sheep combination is common both in the NW., often on unimproved pasture of low carrying capacity, and in the central S. on improved pasture with a moderate to high stocking rate. Properties between Whitemark and Lady Barron exhibit greatest heterogeneity in type of grazing, and the Furneaux Estate, and to a less extent the Lughrata area, relative homogeneity.

Table 1 shows the type of farming, property acreage, and relative sizes of herds or flocks, for the 89 properties (from a total of 114 major grazing properties) for which this information was obtained by interview; it should be noted that one

TABLE 1

Classification of livestock numbers by property acreage

Property Acreage	Sheep				Beef Cattle				Dairy Cattle			
	1–399	400–799	800–1199	1200 +	1–49	50–149	150–449	450 +	1–9	10–29	30–89	90 +
1–99	1	–	–	–	–	–	–	–	1	1	–	–
100–499	10	5	2	3	11	10	1	–	5	7	10	1
500–999	3	5	13	10	17	8	1	–	11	2	3	–
1000–2999	2	3	–	4	3	4	3	1	3	–	–	1
3000–4999	1	1	–	2	–	1	–	2	2	–	–	–
5000 +	–	–	1	1	–	–	1	1	2	–	–	–
Total	17	14	16	20	31	23	6	4	24	10	13	2

farm grazing sheep, beef and dairy cattle, would appear three times in the table opposite the appropriate acreage. About 43 per cent of the properties have an acreage between 500-999, and about 36 per cent between 100-499 ac., the former being strongly weighted by Agricultural Bank properties which average 615 ac.

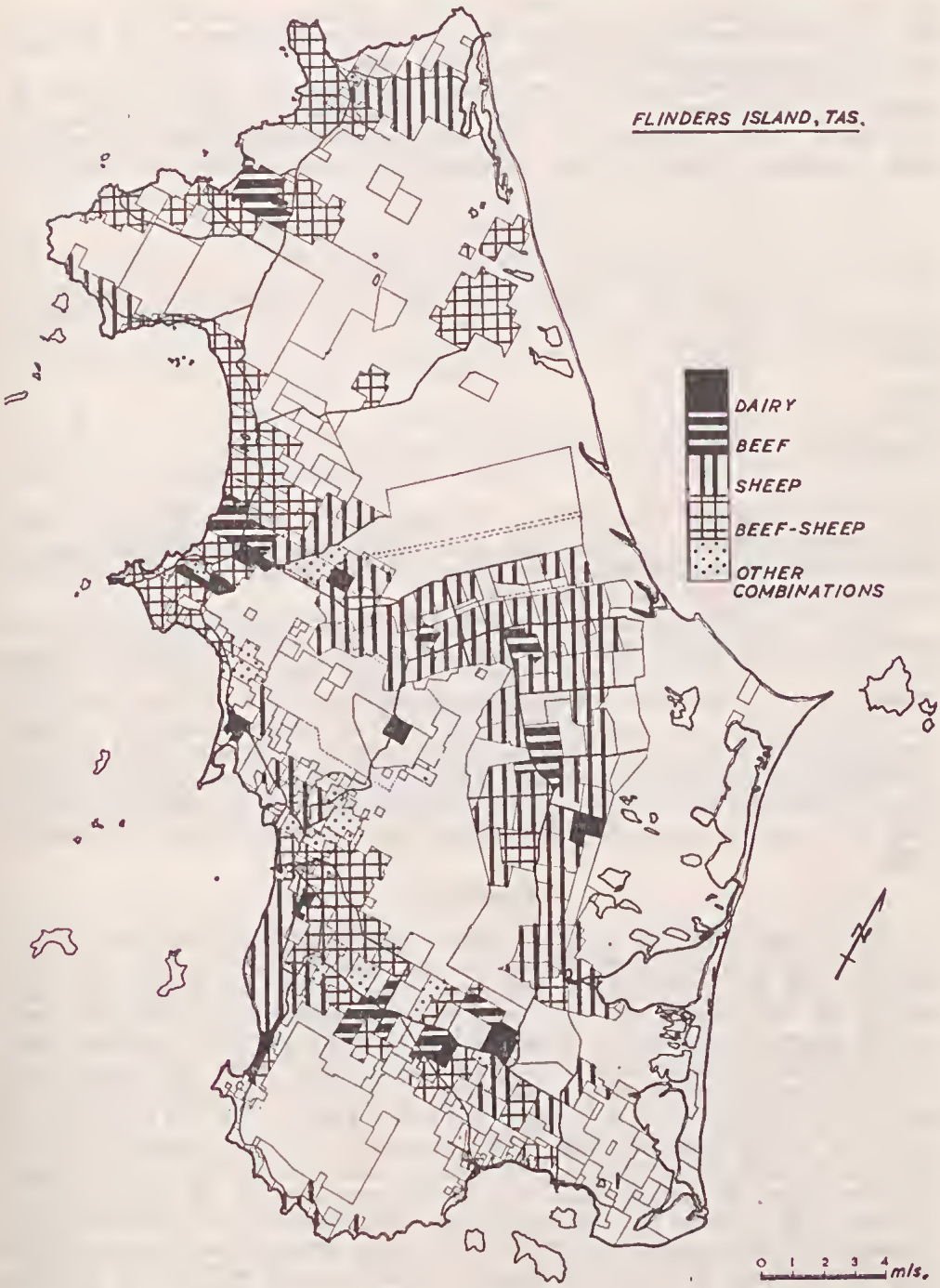

FIG. 4—Types of farming, 1965, based on the source of two-thirds or more income by properties.

(62 Bank properties range from 218-1,095 ac.). There is a fair diversity of flock size; beef herds tend to be less than 100; the average dairy herd size is 48, and several properties run a small number of house cows.

The disparity between the two groups of holdings by type of farming is emphasized. Thus, from Table 2, 56 per cent of holdings derive their major income from sheep (wool and/or mutton), 46 per cent of the total being Agricultural Bank properties; in the latter case, all except 10 properties also run beef cattle,

TABLE 2

Type of farming as a % of properties grazed

	Dairy	Beef	Sheep	Beef-Sheep	Other combinations
Private settlers	15·8%	7·0	10·5	10·5	1·8
Bank settlers	5·3%	–	45·6	1·8	1·8
Total, 114	24	8	64	14	4

because of the general Bank policy of diversification of income. While there are 24 properties which derive their major income from butter-fat production, a total of 38 make regular deliveries to the Island's butter factory, 14 of these latter having an alternative major income source.

Of the 34 sheep graziers who provided the information, 29 (85 per cent) received at least ⅔ of their total income from wool sales, fat lambs being the major source for only 5. This is in part a matter of supply and demand, as the average annual prices for fat lambs have shown a general tendency to decline throughout Australia from the peak levels of 1954-5 and 1955-6. Marketing costs are perhaps more significant in the case of Flinders Island, particularly those involved in transferring livestock to either Victoria or Tasmania; delay due to bad weather and the danger of damage in transit are far less serious hazards in the shipping of wool than for livestock or carcases, and the storage and handling costs are considerably lower.

Conclusion

Despite the varied and spasmodic history of settlement and land development on Flinders Island, activity by the Agricultural Bank of Tasmania under the War Service Land Settlement Scheme has since 1952 successfully placed over sixty settlers on land which could not readily be developed by private resources; already many of these grazing properties are achieving predicted optimum turn-offs, despite considerable variation (positive and negative) from the recommended carrying capacity; the turn-off expected from the 1,200 FEE carrying capacity is of the order of 600 fat lambs or hoggets, 140 culled ewes and 25 beef cattle. At the lower end of the scale, variation in the number of livestock actually held is a function of incomplete development or redevelopment, or a recent large sale which depressed livestock numbers at the time of field interviews; on the positive side, a relatively high stocking rate and/or carrying capacity reflects well advanced land development and management efficiency. In other instances, overstocking is the problem; this may, in the future, depress carrying capacity and turn-off numbers, and cause a decline in animal health due to pasture and soil depletion. A high rate

reflects also, in a small number of cases, the use of non-bank pasture for the purpose of building up (and occasionally concealing) livestock numbers.

Less amenable to measurement is the benefit to private settlers of the findings of Dimmock's soils survey (Dimmock 1957), and subsequent soil, fertilizer and pasture research, with co-operation between various State and Commonwealth Government departments. This development in the 'private sector', together with the Government's injection of considerable financial and personnel resources into large-scale land development has already had its impact. The economic position of the island has been changed from one of isolation and stagnation, indeed of economic decline, to a point where the urgent problem is not one of potential improvement in quality or quantity, but the mechanical difficulty of disposing of the livestock produced. Development has been artificially stimulated, and the result requires urgent attention: transport must be provided to Tasmanian markets, and increased to Victorian markets. A second and inseparable problem is whether to transport live animals, or carcases killed and frozen on the Island.

References

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Explanation of Plate

PLATE 36

A portion of the War Service Land Settlement Scheme Furneaux Estate; see text for explanation. (Scale: 1 inch to 1670 feet; Lands and Surveys Department, Hobart, Run 5, T362-77, 1961.)